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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,541	11/13/2000	Masaharu Ito	YKM-00901	7142

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EXAMINER

LEE, BENNY T

ART UNIT PAPER NUMBER

2817

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER NUMBER
	12

DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

- ☐ This application has been examined ☒ Responsive to communication filed on 17 March 2003 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449 | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-14 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1, 2, 8-11, 13 are rejected.
5. ☒ Claims 3-7, 12, 14 are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. These drawings are: ☐ acceptable;
☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner, ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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DETAILED ACTION

A request for continued examination under 37 C^FAR 1.114, including the fee set forth in 37 C^FAR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CAR 1.114, and the fee set forth in 37 C^FAR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 C^FAR 1.114. Applicant's submission filed on 19 February 2003 has been entered.

The disclosure is objected to because of the following informalities: Page 1, lines 25, 26, and page 2, line 1, note that --(see Fig. 9)-- should follow "6a", "1a", & "1b", respectively. Page 2, line 12, note that --(see Fig. 10)-- should follow "c-c"; line 15, note that --(see Fig. 11)-- should follow "1b". Page 6, lines 1 & 2, note that --(see Fig. 2)-- should follow "101a" & "101b", respectively; line 6, note that --as shown in Fig. 2-- should follow "101b"; line 16, note that --as shown in Fig. 1-- should follow "107". Page 9, line 15, note that --(see Fig. 3)-- should follow "w". Page 11, line 10, note that --(see Fig. 6)-- should follow "104a" & "104b", respectively. Throughout the specification, it should be noted that "distance λ " does not appear consistent with the drawing figures which use the scripted "*l*" symbol to designate the distance (e.g. see pages 2, 3, 7, 8, 9, 11). Note that in the description of Figs 4-8, 10, applicants' should make sure that all reference labels appearing in the corresponding drawing should be commensurately described in the figures description. Appropriate correction is required.

The drawings are objected to because of the following: In Figs. 2, 3, note that reference labels (104, λ_{p1} , λ_{p2}) need to be labeled therein; In figs 2, 4, 5, 10, note that "*l*" does not appear

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consistent with “λ” as described throughout the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, note that it is unclear, even in light of the specification, how the subject matter of this claim reads on the disclosed embodiments of the invention.

The following claims have been found objectionable for reasons set forth below:

In claim 1, second paragraph, note that “on which” has been rephrased as --comprising-- and “are formed” has been deleted; third paragraph, “formed” has been changed to --disposed-- at each occurrence & “obtained by forming” should be rephrased as --and obtained by disposing--; fourth & fifth paragraph, “formed” should be changed to --disposed-- at each occurrence.

In claims 2, 6, “formed” should be changed to --disposed-- at each occurrence.

In claim 2, note that the “first ground conductor” & the “second ground conductor” recited herein should positively relate to the “ground conductors” as recited in claim 1.

In claim 3, line 1, note that “between” should be rewritten as --from-- & line 2, “and” should be rewritten as --to-- for a better characterization.

In claims 4, 8, note that --plurality of-- should precede “second via holes” for a proper characterization.

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In claims 4 & 5, note that “a predetermined pitch” (cl 4) & “a pitch w” (cl 5) should be rewritten as --a predetermined pitch w-- & --the predetermined pitch w”, respectively for consistency.

In claims 6 & 7, note that --plurality of-- should precede “first via holes” at each occurrence for consistency.

In claim 13, note that “formed” should be rewritten as --comprised--.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 8-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (fig. 8) in view of the Japanese (‘313) reference (of record).

The admitted prior art (fig. 8) discloses the claimed invention except for the ground conductors of the coplanar line being connected to an upper ground plane on the second substrate “at an edge of the second conductor”.

The Japanese (‘313) reference discloses an integrated circuit package using coplanar lines. Moreover, note that the upper (i.e. second) substrate (3) of the package comprises an upper ground plane (4). Furthermore, note that the coplanar ground lines (5b) are electrically connected by via connections (10b) to the upper ground plane at locations which are spaced along the edge of the upper (i.e. second) substrate (3) including vias at the edge of the upper dielectric substrate (3).

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Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the package of admitted prior art (fig. 8) to have included via connections connecting the coplanar ground planes to the upper ground plane on the second substrate along the edge of the second dielectric substrate. Such a modification would have been obvious in view of the explicit teaching thereof by the Japanese ('313) reference. Note that such a modification would have been consistent with analogous via connections already provided in the admitted prior art, but would have provided the advantageous benefit of forming such via connections in a much easier manner (i.e. via connections can be easier formed along an edge of the substrate as compared to the interior body of the substrate), thereby suggesting the obviousness of the modification. Moreover, as a consequence of such a modification, the via connections at the edge obviously constitute a semicircular cross section, instead of the full circular cross section of interior vias.

Applicant's arguments filed 19 February 2003 have been fully considered but they are not persuasive.

Applicant has asserted that the circuit in the Japanese ('313) reference is of a microwave stripline configuration, and thus is different in structure and function from a "coplanar line" as recited in the claims. Moreover, applicant argues that conductive layers (5a, 5b) serve the function of coupling the semiconductor device (9) to ground. It is additionally argued that the hybrid circuit of the Japanese ('313) reference does not disclose the feed through comprised of a coplanar line & an inner line on the first substrate. Finally, it has been argued that the Japanese

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(‘313) reference does not disclose the “metal members” being “semi-cylindrical electrodes” along the edge or interface of the second dielectric.


In response to applicants’ arguments, it should be noted that the examiner is not per se relying on the Japanese (‘313) reference for a teaching of a coplanar line. In fact the admitted prior art Fig. 8 discloses a circuit which already includes a coplanar line as well as an inner line, both of which are located on the first substrate. Note that the relevant teaching being relied on in the Japanese (‘313) reference is the use of a ground via (10b) located at the edge or interface between the upper & lower dielectric substrates. As noted in reasons set forth above, the addition of such via connections to the coplanar line package of the admitted prior art would have imparted thereto the advantages noted above. Note that the fact that the Japanese (‘313) reference’s signal conductor (7b) may work in a different mode is not particularly critical since it is the ground via (10b) being located at an edge of the substrate layer which is critical teaching being relied on. Moreover, it can be argued that the signal conductor (7b) and the signal layers (5b) being in the same plane do indeed constitute a “coplanar line” in it’s generic sense. Furthermore, regardless of whether a “coplanar line” is realized or not, it should be noted that the grounding configuration of the Japanese (“313) reference corresponds to the grounding configuration in the admitted prior art fig. 8 (except for the edge located vias), thereby further suggesting the compatability of such a combination, regardless of the functional purpose of such layers (5a, 5b). Finally, note that since the internal vias (10b) in the Japanese (‘313) reference are

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of a cylindrical cross section, obviously at the edge (which is a planar surface), such vias obviously would have been semi-cylindrical cross section rather than the full cross section.

Claims 3-7, 12, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308 4902.


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817

B. Lee

May 30, 2003